

PATENT
Atty. Dkt. No. WEAT/0555**REMARKS**

This is intended as a full and complete response to the Office Action dated August 11, 2006, having a shortened statutory period for response set to expire on November 13, 2006. Please reconsider the claims pending in the application for reasons discussed below.

Claims 1, 3, 6, 8, 9, 11-14, 16, 17, 19, and 20 remain pending in the application and are shown above. Claims 1, 3, 6, 8, 9, 11-14, 16, 17, 19, and 20 are rejected by the Examiner. Claim 8 has been amended to clarify the invention. Reconsideration of the rejected claims is requested for reasons presented below.

Claim Rejections - 35 U.S.C. § 102

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent to *Beasley*, 4,387,954 (hereinafter, "*Beasley*"). In response, Applicants respectfully traverse the rejection.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the...claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Further, the elements must be arranged as required by the claim. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Beasley does not teach, show or suggest that "a property of the D-shaped portion changes in response to the measurand" or that "a refractive index of the layer changes in response to a change in the measurand" as recited in independent claim 1. *Beasley* teaches an evanescent wave coupler, which requires two or more waveguides. In the coupler taught by *Beasley*, compression of an interleaved film between two fiber optic cores occurs in response to pressure perpendicular to the film, which will change the spatial relationship between the two cores (col. 4 lines 3-16). A property of the D-shaped portion is not changed in *Beasley*, only the spatial relationship between two

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cores changes. A change in the refractive index of the interleaved film of *Beasley* or any other layer is not taught.

Accordingly, Applicants submit that independent claim 1, as well as those claims that depend therefrom, are allowable and respectfully request withdrawal of this rejection.

Claim Rejections - 35 U.S.C. § 103

Claims 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Beasley* in view of *Hartman*. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Beasley* in view of U.S. Published Application to *Bailey et al.*, 2002/0197037 (hereinafter, "*Bailey*").

Claims 3 and 6 depend from claim 1, which Applicants submit is allowable for reasons described above. Accordingly, Applicants submit these claims are also allowable and respectfully request withdrawal of this rejection with regard to these claims.

The Examiner bears the initial burden of establishing a *prima facie* case of obviousness. See MPEP § 2142. To establish a *prima facie* case of obviousness three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Third, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See MPEP § 2143.

Regarding claim 8, the combination of *Beasley* in view of *Hartman* fails to meet at least the third criterion. For example, *Beasley* in view of *Hartman* does not teach, show, or suggest that "a property of the first or the second D-shaped waveguide changes in response to the measurand" as recited in independent claim 8. As described above, a property of the D-shaped waveguides is not changed in *Beasley*; only the spatial relationship between two fiber cores changes. *Hartman* does not teach, show or

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suggest a D-shaped waveguide, so *Hartman* cannot teach changing a property of the D-shaped waveguides in response to a measurand.

Accordingly, Applicants submit that claim 8, as well as those claims that depend therefrom, is allowable and respectfully request withdrawal of this rejection.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Beasley* in view of *Hartman* as applied to claim 8 above, and further in view of U.S. Patent to *Bergh*, 4,386,822 (hereinafter, "*Bergh*"). Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Beasley* in view of *Hartman* as applied to claim 8 above, and further in view of *Bailey*. Claims 9 and 11 depend from claim 8 which Applicants submit is allowable for reasons described above. Accordingly, Applicants submit these claims are also allowable and respectfully request withdrawal of this rejection with respect to these claims.

Claims 12, 13, 16 and 19 stand rejected under 35 U.S.C. 103(a) as being unpatentable over *Beasley* in view of *Rowe*. Applicants respectfully traverse the rejection.

The combination of *Beasley* in view of *Rowe* fails to meet at least the third criterion for establishing a *prima facie* case of obviousness. For example, *Beasley* in view of *Rowe* does not teach, show, or suggest "strain applied to the D-shaped portion provides a change in a polarization of the light transmitted through the optical sensor in response to the parameter" as recited in independent claim 12.

Beasley teaches an evanescent wave coupler, which requires two or more waveguides. In the coupler taught by *Beasley*, compression of an interleaved film between two fiber optic cores occurs in response to pressure perpendicular to the film, which will change the spatial relationship between the two cores (col. 4 lines 3-16). Strain is not applied to the D-shaped portion in *Beasley*; *Beasley* only teaches applying pressure to compress the interleaved film and change the spatial relationship between the two cores. *Rowe* fails to overcome the deficiencies in *Beasley*. Although *Rowe* may teach that fiber optic sensors may be used to sense pressure, *Rowe* does not

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teach applying strain to a D-shaped portion of an optical sensor. Also, the sensor in *Rowe* requires a strand 22 helically wound around the fiber 20 to measure the disturbance, and the strand 22 transmits the radial forces to the fiber 20.

Accordingly, Applicants submit that claims 12, 13, 16 and 19, as well as those claims that depend therefrom, are allowable and respectfully request withdrawal of this rejection.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Beasley* in view of *Rowe* as applied to claim 13 above, and further in view of *Hartman*. Claims 17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Beasley* in view of *Rowe* as applied to claims 12 and 19, respectively, above, and further in view of *Bailey*. Each of these claims depends (directly or indirectly) from claim 12, which Applicants submit is allowable for reasons described above. Accordingly, Applicants submit these claims are allowable and respectfully request withdrawal of these rejections.

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Conclusion

The references cited by the Examiner, alone or in combination, do not teach, show or suggest the invention as claimed. Having addressed all issues set out in the office action, Applicants respectfully submit that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted, and
S-signed pursuant to 37 CFR 1.4,

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